4 — Service Tools and Service Concepts

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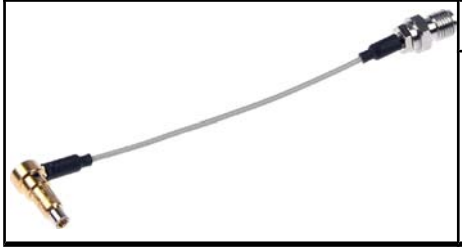
Service tools

The table below gives a short overview of service tools that can be used for testing, error analysis and repair of product RM-88, refer to various concepts.

	AC-34	Universal power supply	
	Universal power supply		
	CA-31D	USB cable	
	The CA-31D USB cable is used to connect FPS-10 or FPS-11 to a PC. It is included in the FPS-10 and FPS-11 sales packages.		
	CA-56RS	RF cable	
	Small RF cable that is used for RF tuning with MJ-67 module jig.		

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CU-4	Control unit	

CU-4 is a general service tool used with a module jig and/or a flash adapter. It requires an external 12 V power supply.

The unit has the following features:

- software controlled via USB
- EM calibration function
- Forwards FBUS/Flashbus traffic to/from terminal
- Forwards USB traffic to/from terminal
- software controlled BSI values
- regulated VBATT voltage
- 2 x USB2.0 connector (Hub)
- FBUS and USB connections supported

When using CU-4, note the special order of connecting cables and other service equipment:

Instructions

1 Connect a service tool (jig, flash adapter) to CU-4.
2 Connect CU-4 to your PC with a USB cable.
3 Connect supply voltage (12 V)
4 Connect an FBUS cable (if necessary).
5 Start Phoenix service software.

Note: Phoenix enables CU-4 regulators via USB when it is started.

Reconnecting the power supply requires a Phoenix restart.

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	DKE-2	Mini-USB cable	
	USB to mini-USB connector cable.		
	FLS-4S	Flash device	
	FLS-4S is a dongle and flash device incorporated into one package, developed specifically for POS use.		
	FPS-10	Flash prommer	
	FPS-10 interfaces with: • PC • Control unit • Flash adapter • Smart card FPS-10 flash prommer features: • Flash functionality for BB5 and DCT-4 terminals • Smart Card reader for SX-2 or SX-4 • USB traffic forwarding • USB to FBUS/Flashbus conversion • LAN to FBUS/Flashbus and USB conversion • Vusb output switchable by PC command FPS-10 sales package includes: • FPS-10 prommer • Power Supply with 5 country specific cords • USB cable		

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FS-5	Product specific adapter	

RM-88/RM-89 specific adapter.

MJ-67	Module jig	

RM-88/RM-89 specific module jig.

- **Table 7 Attenuation table for MJ-67**

System	Channel	Tx/Rx-att. (dB)
GSM 850	128	0.2
	190	0.1
	251	0.1
GSM 900	975	0.1
	38	0.1
	124	0.2
GSM 1800	512	0.3
	698	0.2
	885	0.1
GSM 1900	512	0.5
	700	0.6
	810	0.8

Measured with Universal Radio Communication Tester CMU-200.

Note: Tx-attenuation tolerance is +/- 0.5dB
Rx-attenuation tolerance is +/- 1.0 dB

RJ-86	Soldering jig	

RM-88/RM-89 specific soldering jig.

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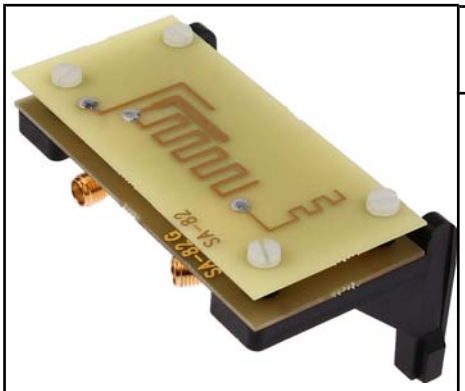

SA-82	Flash adapter antenna coupler	

RM-88/RM-89 specific flash adapter antenna coupler.

- Flash adapter antenna coupler SA-82 attenuation table for NOKIA E62, measured with Universal Radio Communication Tester CMU-200.

Table 8 Attenuation table for antenna coupler SA-82

System	Channel	Tx-att. (dB)	Rx-att. (dB)
GSM 850	128	5.8	4
	190	5.3	3
	251	5.3	3
GSM 900	975	5.8	4
	38	5	4
	124	5	4
GSM 1800	512	7.7	6
	698	7.4	6
	885	7.2	5
GSM 1900	512	7.9	6
	700	6.2	6
	810	5.6	6

Note: Tx-attenuation tolerance is +/-0.5 dB.
Rx-attenuation tolerance is +/-1.0dB.

SRT-6	Opening tool	

SRT-6 is used to open phone covers and B-to-B connectors.

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	SS-46	Interface adapter	
	SS-46 acts as an interface adapter between the flash adapter and FPS-10.		
	SS-62	Generic flash adapter base for BB5	
	• generic base for flash adapters and couplers • SS-62 equipped with a clip interlock system • provides standardised interface towards Control Unit • provides RF connection using galvanic connector or coupler • multiplexing between USB and FBUS media, controlled by VUSB		
	SS-76	Domesheet assembly jig	

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Service concepts

Flash concept with FPS-10

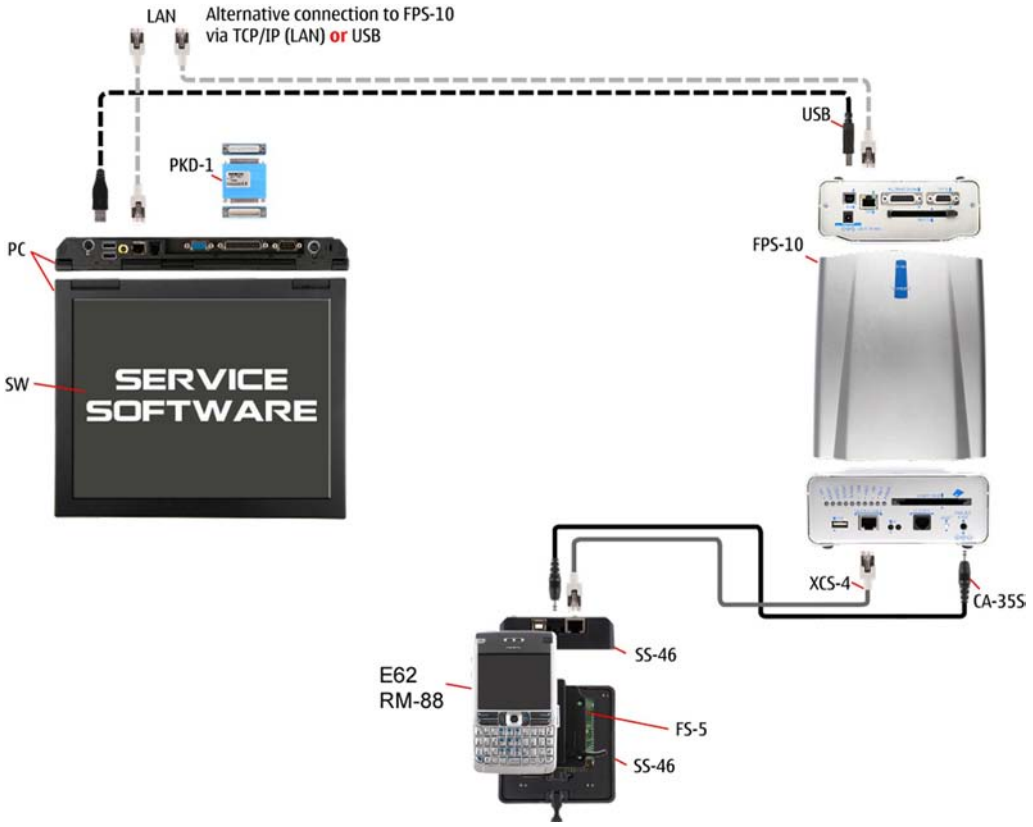

Figure 28 Basic flash concept with FPS-10

Description	Type
FS-5	Flash adapter
SS-46	Interface adapter
CA-35S	Power cable
XCS-4	Modular cable
	Standard USB cable
FPS-10	Flash prommer box
	Standard USB cable
PKD-1	SW security device

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MJ-67 module jig concept

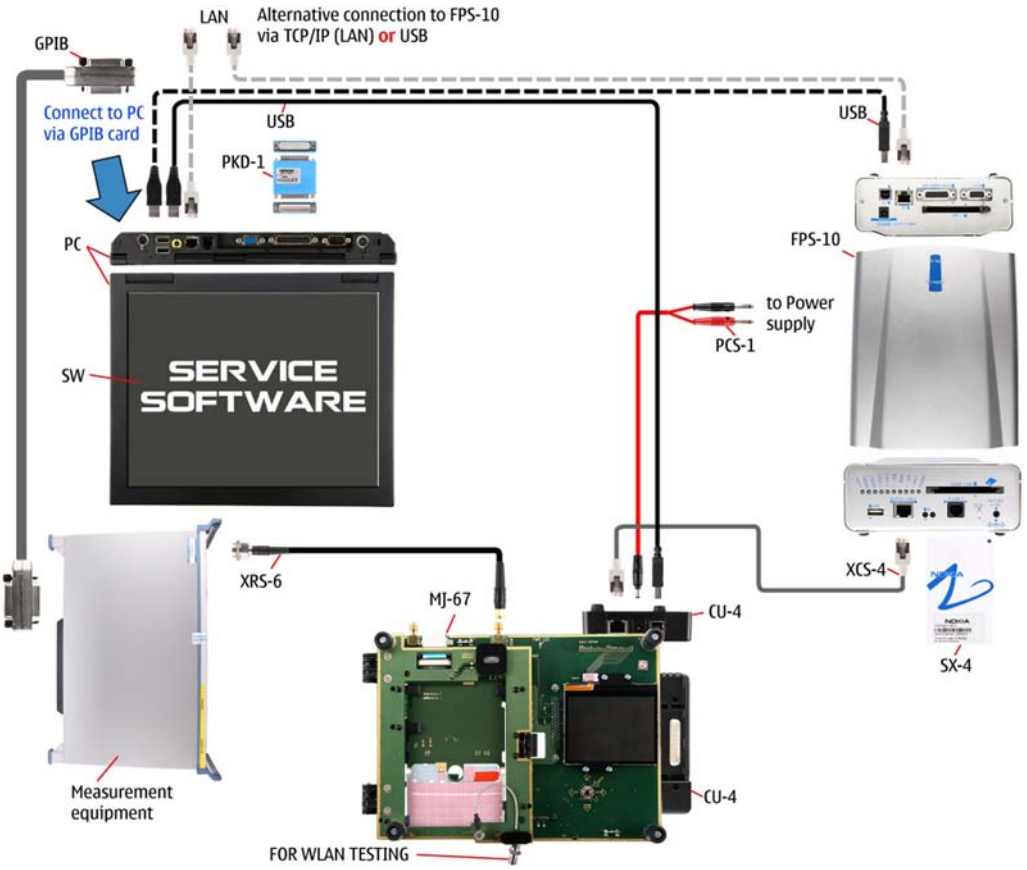

Figure 29 MJ-67 module jig service concept

Type	Description
MJ-67	Module jig
CU-4	Control unit
FPS-10	Flash prommer box
SX-4	Smart card
XCS-4	Modular cable
PCS-1	DC power cable
	Standard USB cable
	Standard USB cable
	GPIB control cable
XRS-6	RF cable
PKD-1	SW security device
	RF shield box

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POS (Point of Sale) flash concept

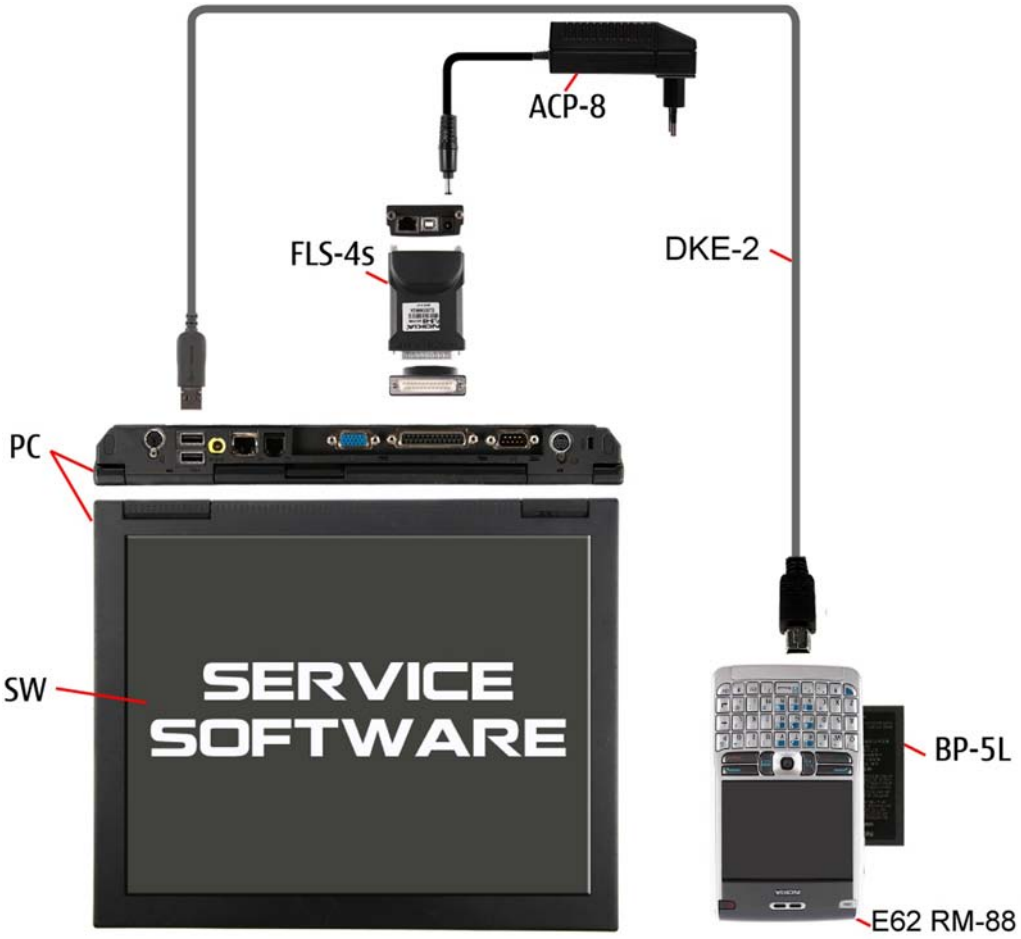

Figure 30 POS flash concept

Type	Description
CA-53	USB connectivity cable
FLS-5	POS flash device
ACP-8	Power adapter

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Service concept for RF testing and RF/BB tuning

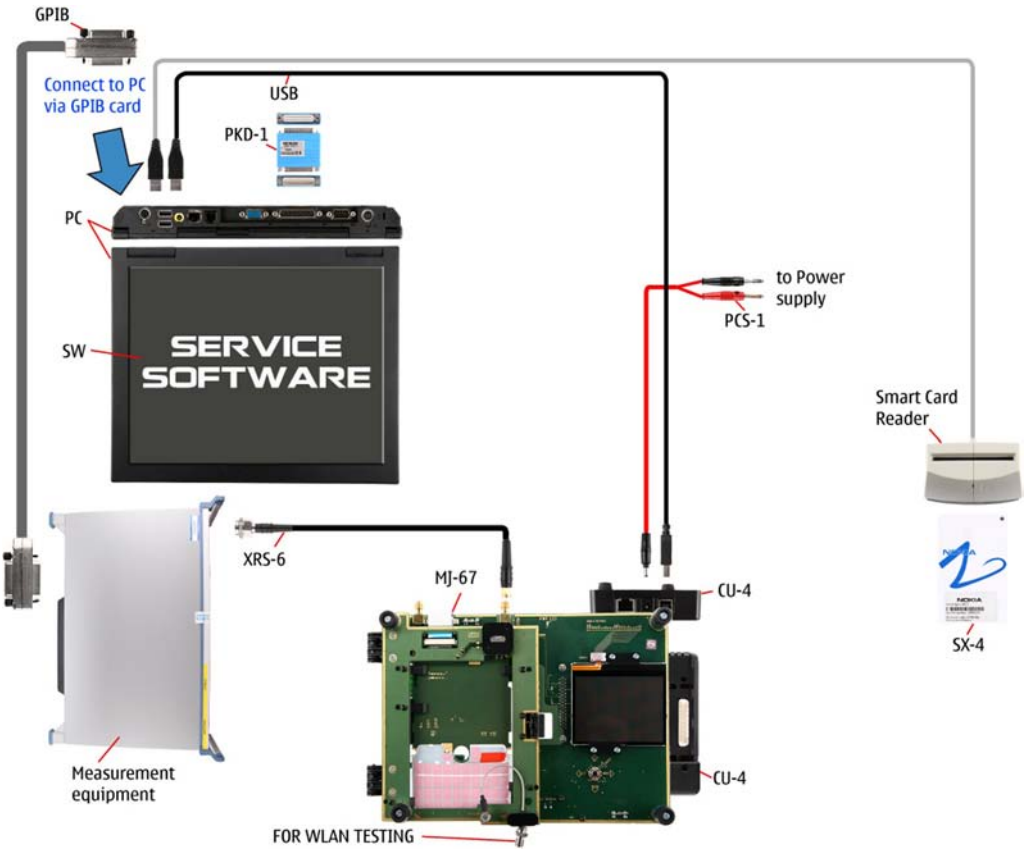

Figure 31 Service concept for RF testing and RF/BB tuning

Description	Type
MJ-67	Module jig
CU-4	Control unit
	Standard USB cable
PCS-1	DC power cable
	Standard USB cable + smart card reader
SX-4	Smart card
XRS-6	RF cable
	GPIB control cable
PKD-1	SW security device
	RF shield box

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CU-4 flash concept with FPS-10

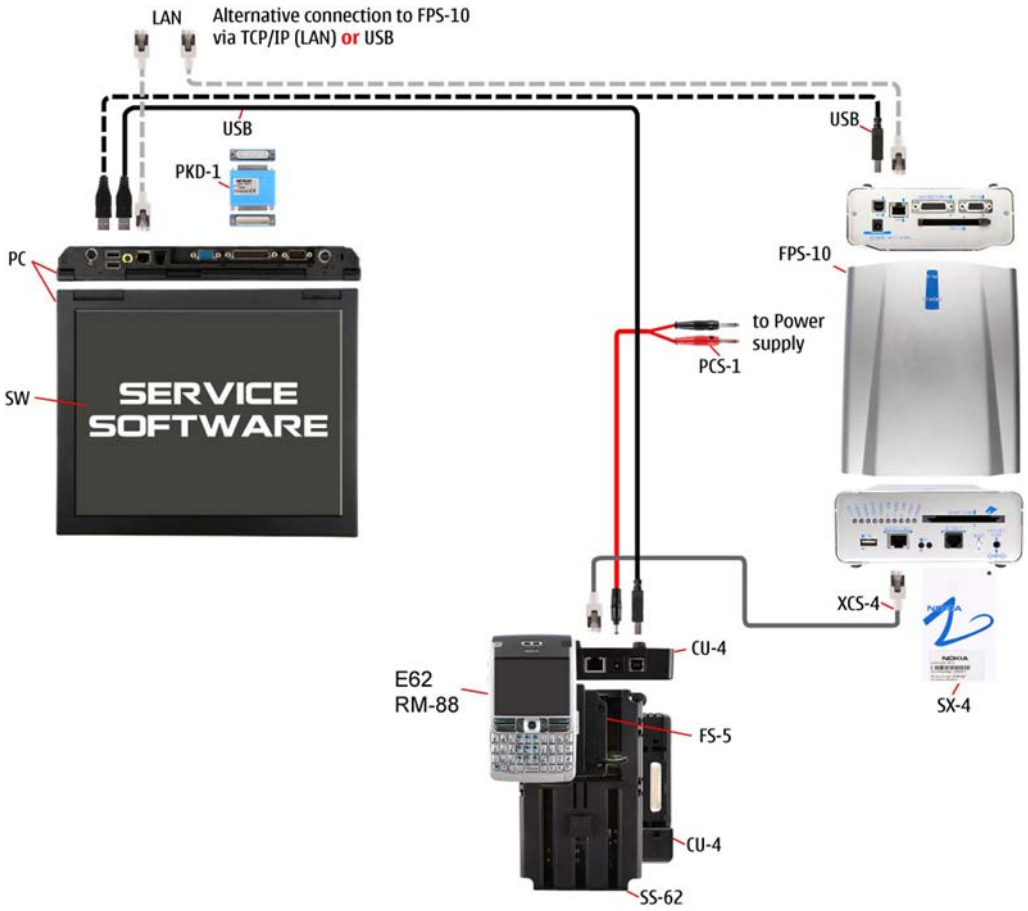

Figure 32 CU-4 flash concept with FPS-10

Note: FPS-8 concept can also be used for flashing.

Description	Type
SS-62/FS-5	Flash adapter
CU-4	Control unit
XCS-4	Modular cable
PCS-1	Power cable
FPS-10	Flash prommer box
	Standard USB cable
	Standard USB cable
PKD-1	SW security device

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RF testing and BB testing/tuning

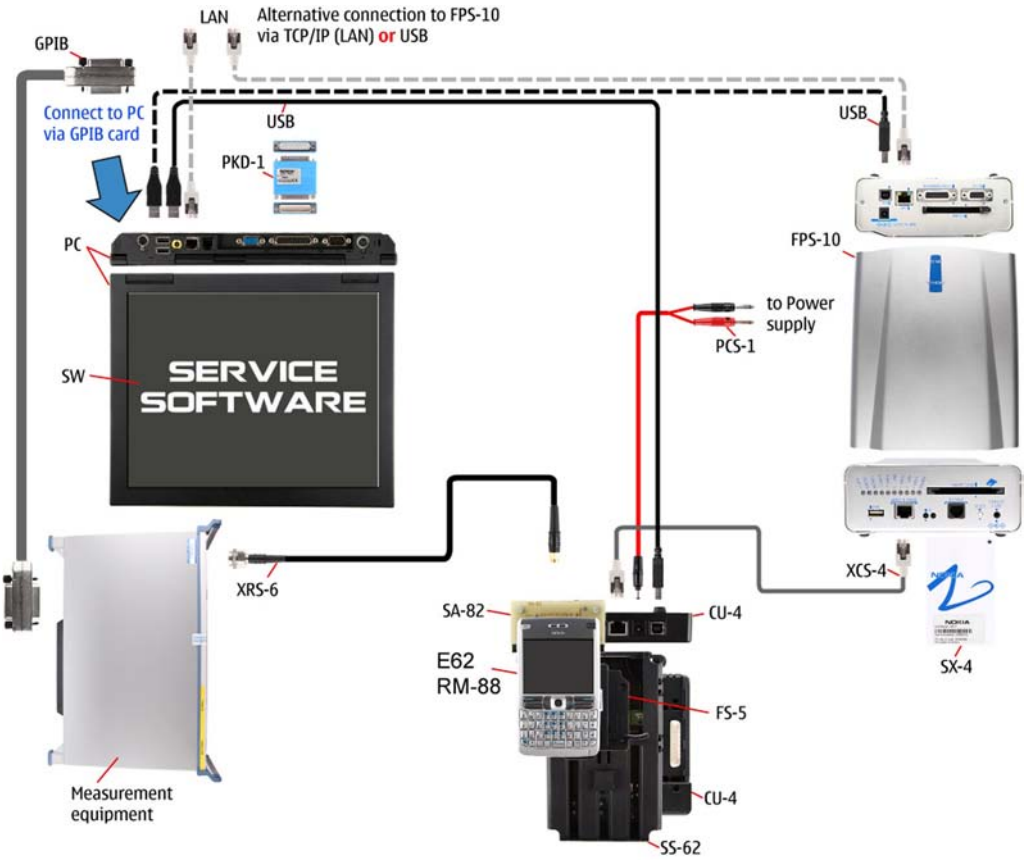

Figure 33 RF testing concept and BB testing/tuning

Type	Description
SS-62/FS-5	Flash adapter
CU-4	Control unit
SA-82	RF coupler
PCS-1	Power cable
XCS-4	Modular cable
	Standard USB cable
	Standard USB cable + smart card reader
SX-4	Smart card
	GPIB control cable
XRS-6	RF cable
PKD-1	SW security device
	RF shield box

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